

What is claimed is:

1. A vertebral disk prosthesis structured to be disposed adjacent to at least one vertebral body, said vertebral body having a periphery, said vertebral disk prosthesis comprising:

at least one member having at least two movable lateral portions, said lateral portions coupled to each other;

said lateral portions movable between:

a contracted position in which the lateral portions are disposed such that the member has a first lateral width, said first lateral width being smaller than the lateral width of a vertebral body of a patient;

an expanded position in which the lateral portions are disposed such that the contacting member has a second lateral width that is larger than the first lateral width and said at least one axial end surface is configured for supporting and abutting the periphery of the vertebral body; and

an expansion member disposed between said lateral portions and configured for moving said first and second lateral portions between the contracted position and the expanded position.

2. The prosthesis of claim 1, wherein the shape of the member in the expanded position generally corresponds to the periphery of the vertebral body.

3. The prosthesis of claim 1, wherein said lateral portions are flexibly coupled to each other for moving between the contracted and the expanded position.

4. The prosthesis of claim 3, wherein said lateral portions are normally biased to the contracted position and must be acted upon by said expansion member to be moved to said expanded position.

5. The prosthesis of claim 3, wherein said first and second lateral portions are normally biased to a semi-expanded position and must be acted upon by said expansion member to be moved to said expanded position.

6. The prosthesis of claim 1, wherein the expansion member comprises a wedge receivable between said first and second lateral portions for moving said lateral portions between the contracted position and the expanded position.

7. The prosthesis of claim 6, further comprising a threaded fastener connected between the wedge and said at least one member such that rotation of said threaded fastener moves said wedge with respect to said at least one member whereby said lateral portions are moved between the contracted position and the expanded position.

8. The prosthesis of claim 6, wherein said wedge has a laterally elongated cross-section extending along a plane normal to a direction of movement of said wedge.

9. The prosthesis of claim 6, wherein:
said at least one member further includes a central portion; and
said lateral portions movably coupled to said central portion.

10. The prosthesis of claim 6, wherein:
said at least one member further includes a central portion and a gripping portion;
said gripping portion facing generally axially and configured for engaging and gripping the adjacent vertebral body; and
said wedge includes an axial surface that is inclined with respect to the plane of the axial surface for moving the gripping portion against the vertebral body.

11. The prosthesis of claim 6, wherein said wedge and at least one member are associated for resisting withdrawal movement of said wedge with respect to said at least one member to resist said first and second lateral portions from moving towards the contracted position.

12. The prosthesis of claim 6, wherein said wedge and said at least one member comprise a ratchet configured for allowing movement of said wedge with respect to said first and second lateral portions in a first direction for moving said first and second lateral portions to the expanded position and for restricting or resisting movement of said wedge in an opposite direction.

13. The prosthesis of claim 6, wherein the lateral portions comprise a first wedge support portion and the wedge comprises a second wedge support portion, one of the wedge support portions comprising a key and the other comprising a keyway configured and dimensioned for slideably receiving the key to provide axial support to the wedge.

14. The prosthesis of claim 1, wherein in the expanded position said first and second lateral portions are configured for abutting and supporting at least about 50% of the periphery of the vertebral body.

15. The prosthesis of claim 1, wherein said at least one member comprises a cage configured for locking adjacent vertebral bodies together, and said axial end surface comprises first and second axial end surfaces facing in opposite directions for abutting and supporting the adjacent vertebral bodies.

16. The prosthesis of claim 1 wherein:
said at least one member includes a top endplate and a bottom end plate;
said top endplate structured to engage one vertebral body and said bottom endplate structured to engage a second vertebral body; and
wherein said top endplate and said bottom endplate are pivotally connected for allowing the adjacent vertebral bodies to pivot with respect to each other.

17. The prosthesis of claim 16, further comprising a pivot limiter disposed between said top and bottom endplates and comprising a sloped surface facing one endplate, wherein said top endplate and said the pivot limiter are pivotally connected and the sloped surface is configured and associated with said top and bottom

endplates for allowing and limiting pivoting between the top endplate and the pivot limiter.

18. The prosthesis of claim 16, wherein each of said top and bottom endplates comprises a central portion disposed between said lateral portions, wherein the central portion is connected to the other member.

19. The prosthesis of claim 16, further comprising:
a pivot that pivotally connects said top and bottom endplates for axial rotation;
and
at least one protrusion associated with one of said top and bottom endplates and received in an opening of the other of the said top and bottom endplates, wherein the opening is larger than the protrusion in a rotational direction about the pivot for permitting and limiting the axial rotation.

20. The prosthesis of claim 16, wherein the pivot comprises a universal pivot.

21. The prosthesis of claim 16, further comprising a bushing that comprises a gel disposed and in supportive association between said top and bottom endplates.

22. The prosthesis of claim 16, wherein said at least one member includes a spacer disposed between said top and bottom endplates.

23. The prosthesis of claim 22, wherein:
said spacer includes a central portion; and
said lateral portions movably coupled to said central portion.

24. The prosthesis of claim 23, wherein said lateral portions are normally biased to the contracted position and must be acted upon by said expansion member to be moved to said expanded position.

25. The prosthesis of claim 23, wherein said first and second lateral portions are normally biased to a semi-expanded position and must be acted upon by said expansion member to be moved to said expanded position.

26. The prosthesis of claim 1, wherein the lateral portions are movably coupled by a living hinge.

27. The prosthesis of claim 26, wherein:
said living hinge comprises first and second living hinges connected to the first and second lateral portions, respectively; and
said at least one member comprises a central portion coupled to each said living hinges.

28. A vertebral disk prosthesis, comprising at least one member configured for supportively engaging a vertebral body, wherein the prosthesis is expandable from an implantation configuration to an implanted configuration in which the prosthesis is expanded both laterally and axially compared to the implantation configuration for supporting and gripping the body.

29. The prosthesis of claim 28, further comprising an expansion member configured for moving with respect to said at least one member to expand the prosthesis from the implantation to the implanted configurations.

30. The prosthesis of claim 28, wherein said at least one member comprises:
first and second lateral portions connected to each other movably between:
a contracted position in the implantation configuration, in which the body of said at least one member has a first lateral width and the end surface is narrower than the lateral width of a vertebral body of a patient;
an expanded position in the implanted configuration, in which the lateral portions are disposed such that said at least one member has a second lateral

width that is larger than the first lateral width, and in which the axial end surface is configured for supporting and abutting the body;

said at least one member having an axial portion configured for moving between:

a retracted position in the implantation configuration, in which the prosthesis has a first axial height; and

an extended position in the implanted configuration, in which the prosthesis has a second axial height that is greater than the first axial height.

31. The prosthesis of claim 30, wherein the axial portion comprises a gripping portion disposed and configured for engaging and gripping an interior portion of the vertebral body face in the expanded position.

32. The prosthesis of claim 30, further comprising an expansion member associated with lateral and axial portions for moving the lateral and axial portions to the expanded and extended positions.

33. The prosthesis of claim 32, wherein the expansion member comprises a wedge with lateral and axial wedge surfaces cammingly associated with the lateral and axial portions for camming to the expanded and extended positions.

34. A vertebral disk prosthesis, comprising:
first and second members each having an axial end surface configured for supporting and abutting adjacent vertebral bodies; and
a bushing disposed between and in supportive association with the contacting members when the prosthesis is implanted between the bodies, wherein the bushing comprises a gel and is configured for absorbing shock between the adjacent vertebral bodies.

35. The prosthesis of claim 34, wherein the bushing is slideable with respect to the said first member for reducing shearing within the bushing.

36. The prosthesis of claim 34, wherein the first and second members comprise lateral portions that are moveable for changing the lateral width of the prosthesis from a narrow width selected for facilitating implantation to a wide width selected for supportively abutting the periphery of the bodies.

37. An instrument for implanting a prosthesis, comprising:
first and second fastener drivers configured for engaging and driving first and second fasteners for adjusting the width of the prosthesis; and
a spacer connected between the first and second drivers and configured and dimensioned for positioning between first and second body contacting members of the prosthesis that are pivotably connected, wherein the spacer is configured for maintaining the relative position of the contacting members.

38. The instrument of claim 37, wherein the drivers are substantially parallel.

39. The instrument of claim 37, wherein the drivers are adapted to substantially simultaneously engage both fasteners.

40. The instrument of claim 37, further comprising a releasable locking mechanism adapted to releasably secure the implantation instrument to the prosthesis.

41. The instrument of claim 40, wherein the fasteners each define an internal groove, and wherein a releasable locking mechanism further comprises a locking ball adapted to be received by the groove, and a sliding cam for controlling the position of the locking balls.

42. A method for implanting a vertebral disk prosthesis, comprising the steps of:

(1) providing an intervertebral prosthesis that is expandable from an implantation configuration to an implanted configuration in which the prosthesis is

expanded laterally compared to the implantation configuration for supporting and gripping the body;

- (2) positioning said prosthesis between adjacent vertebral bodies; and
- (3) expanding said prosthesis laterally between said vertebral bodies.

43. The method of claim 42, wherein the prosthesis is laterally expanded to support the adjacent vertebrae along their outer edges.